MIS
(Management Information System)
(21-972)

Department of Industrial Engineering
Sharif University of Technology

Session #10

Course Description

- **Instructor**
  - Omid Fatahi Valilai, Ph.D. Industrial Engineering Department, Sharif University of Technology
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- **Class time**
  - Saturday-Monday
  - 10:30~12:00

- **Course evaluation**
  - Mid-term (20%)
  - Final exam (20%)
  - Quiz (10%)
  - Exercise-Projects (30%)
Course Description (Continued ...)

- **Mid-term session:**
  - Saturday, 7th, Azar 1394

- **Final session:**
  - Monday, 28th, Dey 1394

- **Reference:**

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Course Description (Continued ...)

- **Reference:**
  - William S. Davis, David C. Yen, “The information system consultant’s handbook: system analysis and design”, 2010, Taylor and Francis
  - Terence Lacey; “Management Information Systems”, 2004, Cengage Learning EMEA
  - Gabriele Piccoli; “Information systems for managers: texts & cases ”, 2007, John Wiley & Sons Inc
Course Description (Continued..)

- Contents:
  - Introduction to Systems Analysis and Design
  - Analyzing the Business Case
  - Managing Systems Projects
  - Requirements Modeling
  - Data and Process Modeling
  - Object Modeling
  - Development Strategies
  - User Interface Design
  - Data Design
  - System Architecture
  - Managing Systems Implementation

Course Description (Continued..)

- Contents:
  - Requirements Modeling
    - Joint Application Development
    - Rapid Application Development
    - Agile Methods
    - Modeling Tools and Techniques
    - System Requirements Checklist
    - Fact-Finding
    - Interviews
    - Documentation
Requirements Modeling

- System Requirements Checklist
  - During requirements modeling, systems developers must identify and describe all system requirements.

- A system requirement is a characteristic or feature that must be included in an information system to satisfy business requirements and be acceptable to users.

- System requirements serve as benchmarks to measure the overall acceptability of the finished system.

- System requirements fall into five general categories:
  - Outputs, inputs, processes, performance, and controls.

- Output Examples
  - The Web site must report online volume statistics every four hours, and hourly during peak periods.

  - The inventory system must produce a daily report showing the part number, description, quantity on hand, quantity allocated, quantity available, and unit cost of all sorted by part number.

  - The contact management system must generate a daily reminder list for all sales reps.

  - The purchasing system must provide suppliers with up-to-date specifications.
Requirements Modeling

• System Requirements Checklist
  • Input Examples
    • Manufacturing employees must swipe their ID cards into online data collection terminals that record labor costs and calculate production efficiency.
    • The department head must enter overtime hours on a separate screen.
    • Student grades must be entered on machine scannable forms prepared by the instructor.
    • Each input form must include date, time, product code, customer number, and quantity.
    • Data entry screens must be uniform, except for background color, which can be changed by the user.

Requirements Modeling

• System Requirements Checklist
  • Process Examples
    • The student records system must calculate the GPA at the end of each semester.
    • As the final step in year-end processing, the payroll system must update employee salaries, bonuses, and benefits and produce tax data.
    • The warehouse distribution system must analyze daily orders and create a routing pattern for delivery trucks that maximizes efficiency and reduces unnecessary mileage.
    • The human resources system must interface properly with the existing payroll system.
Requirements Modeling

* System Requirements Checklist
  * Performance Examples
    * The system must support 25 users online simultaneously.
  * Response time must not exceed four seconds.
  * The system must be operational seven days a week, 365 days a year.
  * The accounts receivable system must prepare customer statements by the third business day of the following month.
  * The student records system must produce class lists within five hours after the end of registration.
  * The online inventory control system must flag all low-stock items within one hour after the quantity falls below a predetermined minimum.

Requirements Modeling

* System Requirements Checklist
  * Future growth, costs and benefits
    * In addition to the system requirements, systems analysts must consider scalability, which determines how a system will handle future growth and demands, and the total cost of ownership, which includes all future operational and support costs.

  * Scalability refers to a system's ability to handle increased business volume and transactions in the future.

  * To evaluate scalability, you need information about projected future volume for all outputs, inputs, and processes.